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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
NGUYEN, KIMBINH T	
ART UNIT	**PAPER NUMBER**
2671	

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/821,126	ROBERTSON ET AL.	
	Examiner	Art Unit	
	Kimbinh T. Nguyen	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *23 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-23,25-43 and 45-79* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *79* is/are allowed.

6)☒ Claim(s) *1,3,4,10-23,25,30-43 and 50-78* is/are rejected.

7)☒ Claim(s) *5-9,25-29 and 45-49* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to amendment filed 01/23/04.

2. Claims 1, 3-23, 25-43, 45-79 are pending in the application.

3. The objection of claim 42 has been withdrawn by Examiner.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3, 4, 10-14, 16-23, 30-34, 36-43, 50-54, 56-64, 67-74, 77 and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strasnick et al. (5,555,354).

Claim 1, Strasnick discloses a system that navigates a virtual body within a 3D virtual workspace (col. 2, lines 15-19), comprising an input drive control system that monitors changes in input variables associated with actions of a user input device (col. 8, lines 52-57),. a workspace control system that provides a user with a viewing context comprising a position and orientation associated with a plurality of workspace variables (col. 16, lines 18 and 38); at least one of the workspace variables coupled with the input drive control system such that selection of one of the workspace variables allows user input to change its state (col. 2, lines 61-65); and a change in position and orientation (col. 18. lines 17-22, i.e. changing direction) wherein the change takes place over time

such that the user is made aware of the change in position and orientation of the viewing context (col. 17, line 62 through col. 18, line 5) and a travel control system that couples the at least one of the workspace variables to the input drive (mouse) control system based on a navigation type (navigation modes; col. 8, lines 51-57) which comprises at least one of speed coupled flying (col. 11, line 52; col. 12, lines 63-67col. 16, lines 50-52), orbiting, object manipulation technique, ghost copy technique, possession navigation technique, inverse fog technique, inverse scaling technique and ephemeral word compression. Strasnick does not disclose where the user deselects the workspace variable changes the position and orientation of the viewing context. However, Strasnick teaches in one screen the user selects a directory and reset- sets view back to the initial viewing position above the file system. Go back- returns to the position previously occupied by the Navigator just prior to the most recent move or zoom (col. 14, lines 26-27; lines 52-56). These features related to the user deselected the workspace variable changes as claimed because the Reset and Go back command to set the view back to the initial position to indicate that the object no longer currently selected. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the control panels commands which comprises various controls that can be utilized as navigation aids in order to provide the user a more realistic perspective of travel towards a destination (col. 18, line 15).

Claim 3, Strasnick discloses where the input variables comprise speed (col. 16, line 50), position (col. 16, line 40), and selection data (col. 15, line 58).

Claim 4, Strasnick discloses where the workspace variables comprise object

state (col. 2, line 21), environment state (col. 10, line 20), and virtual body state (col. 8, line 53).

Claim 10, Strasnick discloses where an object can be selected creating a copy of the object where the viewing context assumes the new position and orientation of the copy upon deselection (col. 14, line 43).

Claim 11, Strasnick discloses where the copy is manipulated to a new position creating a second viewing context within the position (col. 14, line 43 and col. 13, line 5).

Claim 12, Strasnick discloses where multiple copies are created and manipulated to a new position (col. 14, line 43) and destroyed upon deselection of the object.

(This is analogous to creating copies and then deleting them, col. 13, line 22).

Claim 13, Strasnick discloses where the viewing context can be adjusted to the position and orientation of the object, possessing the object (col. 9, lines 27-31).

Claim 14, Strasnick discloses where objects inside and outside a radius centered on a virtual body are changed to eliminate occlusions (col. 16, line 22).

Claim 16, Strasnick discloses where objects within a certain distance are reduced in size to eliminate occlusion (col. 20, lines 2-10).

Claim 17, Strasnick discloses where the reduced size of the object depends on the distance from the virtual body (col. 20, line 2, i.e. zooming to a particular radius).

Claim 18, Strasnick does not explicitly disclose where objects outside the

radius are changed to enlarged size. It can be interpreted from the disclosure of reducing the size of objects within a radius (claim 17), that the remaining objects outside the radius will have increased in size relative to those inside.

Claim 19, the arguments presented above with respect to claims 17 and 18 apply to this claim.

Claim 20, Strasnick discloses where the radius is movable and the virtual body state is fixed (col. 8, line 53 "free flight navigation.")

Claim 21, Strasnick discloses where the radius is adjustable and the virtual body (or view) is fixed (col. 9, line 4- "zoom navigation.").

Claim 22, Strasnick discloses where a selection of the environment causes a ground plane to be compressed around a virtual body, allowing navigation within the plane (col. 9, lines 60-65).

Claim 23, Strasnick discloses a processor, display and memory (col. 6, lines 1 1-22). Otherwise, the arguments presented above with respect to claim 1 apply equally to this claim.

Claim 30, the arguments presented above with respect to claim 1 and 10 apply equally to this claim.

Claim 31-34 and 36-41, the arguments presented above with respect to claim 10-14 and 16-21, respectively, apply equally to this claim.

Claim 42, the arguments presented above with respect to claim 22 apply equally to this claim.

Claim 43, the arguments presented above with respect to claim 1,

respectively, apply equally to this claim.

Claims 50-54 and 56-61, the arguments presented above with respect to claims 10-14 and 16-21, respectively, apply equally to this claim.

Claim 62, the arguments presented above with respect to claim 22 apply equally to this claim.

Claim 63, the arguments presented above with respect to claim 1 apply equally to this claim.

Claim 64, the arguments presented above with respect to claim 1 apply equally to this claim.

Claim 67, the arguments presented above with respect to claim 10 apply equally to this claim.

Claims 68, the arguments presented above with respect to claim 11 apply equally to this claim.

Claims 69, the arguments presented above with respect to claim 13 apply equally to this claim.

Claims 70, the arguments presented above with respect to claim 14 apply equally to this claim.

Claim 71, the arguments presented above with respect to claim 22 apply equally to this claim.

Claim 72, the arguments presented above with respect to claim 1 apply equally to this claim.

Claim 74, the rationale provided in the rejection of claim 43 is incorporated herein.

Claim 77, Strasnick discloses displaying an initial viewing context of 3D virtual environment comprising 3D objects (fig. 2A), each object possesses an object state that comprises a position (a data object's height above the ground plane, below the ground plane; col. 6, lines 63-67) and orientation (moving upward moving forward and backward, these feature related to orientation of the object because when the navigator moves around without or with selecting object any object; col. 11, lines 45-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the operation moving around as taught by Strasnick for navigating objects in virtual environment, because it would provide for smoother perceived motion on the display screen (col. 12, lines 66-67); Strasnick also teaches selecting objects with a user input device (col. 10, line 60 through col. 11, line 45); displaying a second viewing context of 3D virtual environment from the position and orientation of the selected object (split screen; col. 13, line 5; col. 14, lines 43-46).

Claim 78, Strasnick discloses displaying an initial viewing context of 3D virtual workspace that comprises 3D objects and a virtual body (fig. 2A); compressing a ground plane of 3D virtual workspace radially around the virtual body (objects viewed in the distance appear very narrow as their x dimension or width is highly compressed at greater distance; col. 9, lines 59-65); displaying the radially compressed 3D virtual workspace including objects located behind the virtual body. Strasnick teaches control resources: zooming to a data block shrinks the full block size file to a small height and

leaves a slender pole the same height and the full size data block...it easier to see files located behind the shrunken block; col. 16, lines 15-24; col. 20, lines 1-12; display a disk with a radial axis coincident with the longitudinal axis of a column; col. 23, lines 36-39). These features related to compressing a ground plane of 3D virtual workspace radially around the virtual body and display the radially compressed 3D virtual workspace. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the compressed dimension and compressed space as taught by Strasnick for displaying compressed object, because it would reduce data block representation enables the navigator to see the data block located behind the zoomed data block (col. 20, lines 8-11).

6. Claims 15, 35 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strasnick et al. (5,555,354) in view of Lengyel (6,064,393).

Claim 15, Strasnick does not disclose where the state of the object within the radius is changed to a transparent state. Lengyel discloses uses transparency to avoid occlusion (col. 12, lines 47-50). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to change the state of the object within a radius to a transparent state to eliminate occlusion. One of ordinary skill in the art would have been motivated to do this in order to get a better view of objects within the selected area.

Claims 35 and 55, the arguments presented above with respect to claim 15 apply equally to this claim.

7. Claims 65 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strasnick in view of Igarashi.

Claim 65, Strasnick does not disclose coupling forward speed of the user input device to the height and tilt of the virtual body. Igarashi discloses coupling the scrolling speed with the zoom level of the display, so that the perceptual scrolling speed remains constant (paragraph 1, line 2- 5). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to couple forward speed of the input device to the height and tilt of the virtual body. One of ordinary skill in the art would have been motivated to do this in order to provide a smoother, less visually disorienting display.

Claim 73, Strasnick discloses an input drive control system that receive changes to a speed of a user input device (col. 11, lines 47-53); maintains a viewing context germane to a state of the virtual body that comprises a position and orientation (remains fixed until reset; col. 8, lines 55-57); a speed coupled flying navigation component (free flight navigation mode; col. 8, lines 58-67) that configures height and tilt of the virtual body based on the forward speed, such that an increase in speed increases the height and tilt of the virtual body and a decrease in speed decreases the height and tilt of the virtual body. Strasnick does not teach height and tilt of the virtual body based on the forward speed; however, Strasnick teaches tilt and height-controls the navigator's viewing angle relative to his perceived height above the ground plane (col. 14, lines 66-67) and Igarashi et al. teaches an increase in speed increases the height and tilt of the virtual body and a decrease in speed decreases the height and tilt

of the virtual body (the system automatically zooms out when the scrolling speed increases, and zooms back in when the scrolling speed decrease (see section "Speed-dependent automatic zooming", page 140). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the navigation technique as taught by Igarashi into the navigation within 3D information of Strasnick for speed control, because it would provide a way to access vast information spaces through limited screen space (see "Introduction", page 139).

8. Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Strasnick in view of Zeleznik.

Claim 66, Strasnick does not disclose means for orbiting a selected object. Zelenik discloses a 3D virtual environment with camera means for orbiting about a point (paragraph 1, line 12). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have a means for orbiting a selected object. One of ordinary skill in the art would have been motivated to do this in order to provide the viewer with more control over the visual environment.

9. Claim 75 is rejected under 35 U.S.C. 103(a) as being unpatentable over Strasnick (5,555,354) in view of Razdow et al. (6,330,008).

Claim 75, Strasnick discloses displaying a viewing context of a 3D virtual workspace based on initial state of 3D objects and an initial state of a virtual body (fig. 2A); selecting objects (selecting data objects; col. 10, line 60 through col. 11, line 45); changing the states of the selected objects (zoom mode navigation) and the virtual body with the user input device such that dragging the input device forward and backward

moves the viewing context from the virtual body toward and away from the object, dragging the input device left or right orbits the viewing context from the virtual body around of the object (col. 11, lines 53-67). Strasnick does not teach dragging the input device left or right orbits the viewing context; however, Razdow et al. teaches an elliptical orbit 9col. 13, lines 38-44). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the elliptical orbit taught by Razdow into the navigation system of Strasnick, because it would provide a quick and easy way for a user to view constantly view the visualization graph from different view point (col. 13, lines 38-50).

10. Claim 76 is rejected under 35 U.S.C. 103(a) as being unpatentable over Strasnick (5,555,354) in view of Naughton (6,344,861).

Claim 76, Strasnick discloses a system that accommodates changes in input variables associated with action of a user input device (the information landscape greatly increases the amount information which can be simultaneously viewed and perceived by the user; col. 4, lines 46-50; col. 7, lines 58-64); maintaining a viewing context that corresponds to a state of a 3D virtual object that comprises a position and orientation (reset-sets view back to the initial viewing position; col. 14, lines 52-53); a ghost copy navigation component that simultaneously displays a modified viewing context that comprises copies of the object is disparate positions and orientation, each copy manipulated to the position and orientation by the input device (split screen mode; col. 14, lines 43-46). Strasnick does not teach a ghost copy navigation component; however, Naughton et al. teaches rendering a ghost image comprising an exact copy of

the graphic image of the data object (col. 31, lines 1-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the ghost copy image taught by Naughton into the navigation system of Strasnick because it would provide visual feedback to the user that the original object remains in the present space even though a copy of the object has been sent through the portal to another space (col. 18, lines 53-55).

Allowable Subject Matter

11. Claim 79 allowed.

The following is an examiner's statement of reasons for allowance: claim 79, the prior art does not anticipate, nor does it suggest reducing occlusions within the viewing context by transforming objects within the radius employing inverse fog technique and the inverse scaling technique.

12. Claims 5-9, 25-29, 45-49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: The prior art does not anticipate, nor does it suggest, the system as claimed in claims 5-9, 25-29 and 45-48. The prior art of record does not include where the deselection of the user input device causes the position and orientation of the virtual body to glide down to a location within a viewing frustum along a ground plane in the 3D virtual workspace.

The prior art does not anticipate, nor does it suggest, the system as claimed in claim 49.

The prior art of record does not include where dragging the input device forward and backward moves the viewing context from the virtual body toward and away from the object and dragging the input device left or right orbits the viewing context from the virtual body around the object.

The above indicated limitations, particularly in combination with the other limitations in the respective claims are not anticipated or suggested by the prior art.

Response to Arguments

13. Applicant's arguments filed 01/23/04 have been fully considered but they are not persuasive, because the main reference Strasnick et al. teaches the limitations of the claims as discussed in the Office Action (see the office Action).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action (new claims 73-79). Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimbinh T. Nguyen whose telephone number is (571) 272-7644. The examiner can normally be reached on Monday to Thursday from 7:00 AM to 4:30 PM. The examiner can also be reached on alternate Friday from 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached at (571) 272-7653. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 29, 2005

/Kimbinh Nguyen/

KIMBINH T. NGUYEN
PRIMARY EXAMINER